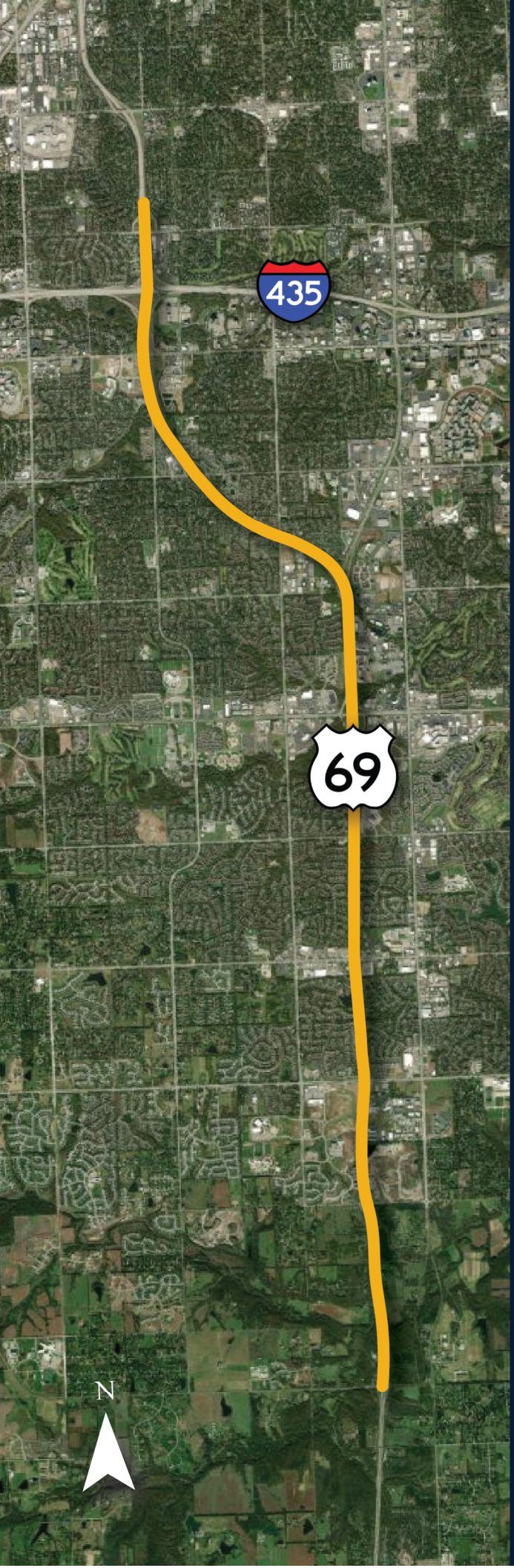
Appendix A – Purpose and Need Memo



69 EXPRESS

US 69 EXPANSION PROJECT

Purpose and Need

September 2021

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U.S. 69 Modernization and Expansion
Environmental Assessment
Purpose and Need Statement

A Purpose and Need Statement describes the transportation problems that a proposed project is to address. This statement provides a description of the purpose of the U.S. 69 Modernization and Expansion Project, and a demonstration of the need for improvements the proposed project is to address within the study area.

1.0 PROJECT OVERVIEW AND BACKGROUND

The Kansas Department of Transportation (KDOT) and the Federal Highway Administration (FHWA) are proposing to modernize and expand a section of the U.S. 69 Corridor, located within the southern limits of the City of Overland Park, in Johnson County, Kansas. The City of Overland Park and the Kansas Turnpike Authority (KTA) are serving as transportation partners for the project.

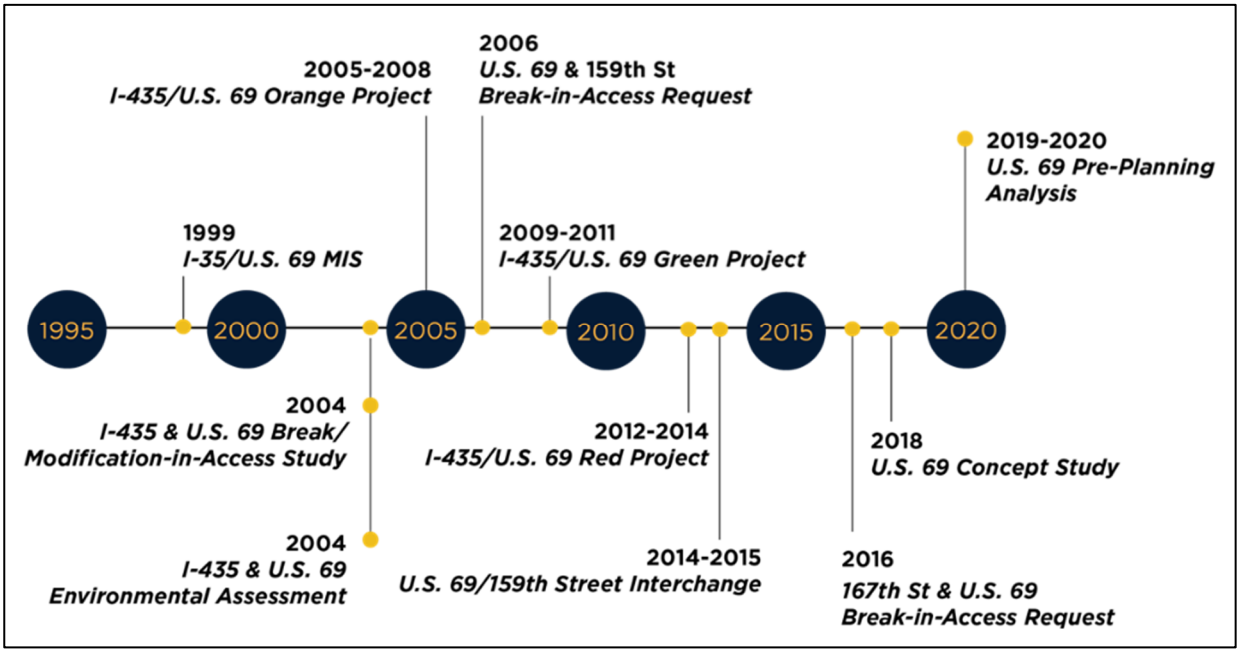
1.1 Project Limits and Termini

Figure 1-1 shows the study area for the project. The study area boundaries represent the logical limits for the infrastructure improvements and environmental review. The overall study limits begin just south of 179th Street and extend to just north of 103rd Street. The overall length is approximately 10 miles. Major cross streets with service interchange access to U.S. 69 included within the study area are 103rd Street, College Boulevard, 119th Street, Blue Valley Parkway (partial access), 135th Street, 151st Street, 159th Street, 167th Street (partial access), and 179th Street. Additionally, the system interchange of U.S. 69 and I-435 is included in the study area.

1.2 Project Background

The U.S. 69 Corridor has been evaluated for improvement within a range of previous studies and projects, beginning with the I-35/U.S. 69 Major Investment Study (MIS) prepared in 1999. The MIS developed a long-term vision for improving the corridor, which has led to a series of smaller improvement projects over the past 10-15 years, as shown on **Figure 1-2**.

Figure 1-1: U.S. 69 Corridor Previous Studies and Projects



Of direct relevance to the U.S. 69 Express study area, a previous I-435 & U.S. 69 Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI) was prepared in 2004 for the northern portion of the U.S. 69 Corridor study area from just north of 95th Street to the south to just east of the Antioch Road overpass. The proposed action from the I-435 & U.S. 69 EA included adding additional lane capacity, reconfiguring interchanges and constructing a new interchange at I-435 and Antioch Road. The purpose and need as it pertained to U.S. 69 was to relieve congestion and improve traffic levels of service, address roadway deficiencies, improve safety and provide enhanced access to major employment centers. As an outcome of the approved 2004 EA/FONSI, U.S. 69 was widened and reconstructed from I- 435 north including improvements to the interchanges with 95th Street,103rd Street, College Boulevard, 119th Street and I-435 and a new collector-distributor road network along southbound U.S. 69 between I-435 and 119th Street.

The 2018 U.S. 69 Concept Study, prepared by the City of Overland Park and coordinated with KDOT, investigated the current and future safety and operational needs in the U.S. 69 Corridor from 179th Street to 103rd Street. This study considered alternatives for the future widening of U.S. 69. In 2020, a U.S. 69 Pre-Planning Analysis was conducted by KDOT, the City of Overland Park and the KTA to evaluate the potential for tolling new capacity in the corridor using an express toll lanes concept. This sketch-level planning study concluded that an express toll lane concept was feasible, and that projected toll revenue could be used to offset a portion of the cost to design, construct and maintain the new lanes on U.S. 69. However, the study did not

authorize construction of toll lanes and more extensive analysis on the feasibility of the proposed express toll lanes and their environmental clearance was required prior to moving forward into design and construction. Preparation of this EA builds upon the previous work performed for the I-435 & U.S. 69 EA/FONSI, the U.S. 69 Concept Study and the U.S. 69 Pre-Planning Analysis, as applicable.

1.3 Proposed Action

The National Environmental Policy Act (NEPA) requires the FHWA to assess the environmental effects of projects that include federal funding or require a federal action. The NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic and natural environmental factors. At the direction of FHWA, an Environmental Assessment (EA) was prepared for the U.S. 69 project to determine whether or not the proposed action has the potential to cause significant environmental effects to the natural or man-made environment. Within the EA, FHWA and KDOT are evaluating a 'No Action' or 'No-Build' alternative and an express toll lane alternative for the U.S. 69 study area as the proposed action to satisfy the purpose and need for the project. Roadway and interchange configurations are also evaluated throughout the corridor.

2.0 PURPOSE AND NEED

2.1 Need for Proposed Project

The proposed project is needed to modernize and expand U.S. 69 between 103rd Street and 179th Street in Overland Park, Kansas. The existing infrastructure has become insufficient to meet current and future mobility needs, resulting in worsening safety, reliability and congestion. There is also a need to address the corridor's issues with transportation improvements that offer long-term sustainability and flexibility for all users.

The proposed project is needed to:

- ***Improve safety*** to address crash frequency and congestion related crashes within the corridor;
- ***Reduce congestion*** and improve traffic operations to meet existing and future travel
  demands;
- ***Promote sustainability*** by addressing infrastructure condition and ongoing operations and maintenance needs, supporting environmental stewardship, as well as improving long-term traveler reliability;
- ***Provide flexible choices*** by promoting a transportation system that accommodates the needs for all users and modes; and

- *Accommodate local and regional growth* through coordinated transportation improvements consistent with planned and proposed community land use.

2.2 Purpose of the Proposed Project

The purpose of the U.S. 69 Express project is to provide the traveling public with an efficient and cost-effective transportation facility for all users of U.S. 69 that improves safety, reduces congestion, promotes sustainability, provides flexible choices and supports local and regional growth.

The proposed project is consistent with the identified needs and goals of the Kansas Long-Range Transportation Plan and Mid-America Regional Council's (MARC) metropolitan transportation plan, *Connected KC 2050*. MARC's goals for the region include the following:

- Access to opportunity — Support a connected system that enables access to all activities, allowing people to succeed by removing transportation barriers.
- Public health and safety — Foster healthy communities and individuals by providing safe and secure places to live, walk, bike, ride the bus and drive with clean air to breathe.
- Healthy environment — Prioritize and support investments that reduce pollution and greenhouse gas emissions and preserve and restore ecosystem health.
- Transportation choices — Provide a range of transportation choices for communities across the region to allow for ease of travel as well as public health and environmental benefits.
- Economic vitality — Maintain a multimodal transportation system that supports the efficient movement of people and goods and promotes economic development.

2.2.1 Improve Safety

Addressing crash frequency and severity throughout the corridor is a primary component of the purpose and need. Crashes are a cost to users in a variety of ways. They may result in property damage, severe injury or even loss of life. Traffic crashes also cause secondary crashes and congestion, resulting in increased fuel consumption and lost time. Improvements along the study corridor are intended to help reduce crash frequency and severity.

2.2.1.1 Historical Safety Conditions

The safety of the U.S. 69 Corridor has been studied across several efforts over the last 15 years, most recently in the U.S. 69 Corridor Study and the U.S. 69 Pre-Planning Study in 2018 and 2020, respectively. These studies identified a high prevalence of rear-end crashes throughout the corridor, accounting for 44 percent of all crashes. Over 80 percent of all crashes were found to be property damage only (PDO). These two statistics often indicate high congestion and sudden changes in speed as related causes. Three areas of the corridor were identified as having higher crash frequency:

- Southbound U.S. 69, between Blue Valley Pkwy. and 135th St. – Due to the left-hand entrance and weave condition. The crash rate in this segment is 53 percent higher than the statewide average for U.S. highways in Kansas;
- Northbound U.S. 69, 151st St. to 135th St. – Where drivers are approaching the back of the vehicle queue at the bottleneck between 135th St. and Blue Valley Pkwy; and
- Northbound U.S. 69, between Blue Valley Pkwy and 119th St. – Where vehicles are emerging from the bottleneck south of Blue Valley Pkwy.

These areas not only experienced the highest crash frequency but were also within areas identified in the previous studies as having the worst traffic operational performance.

2.2.1.2 Existing Safety Conditions

The previous studies were completed with crash data available prior to 2016. As crash patterns can change over time, an updated safety analysis was conducted as part of this project. Crash data was obtained for the most recent years available from KDOT for the years 2015 through 2019. This data was utilized to determine segment crash rates, as well as total crashes based on crash severity and crash type.

Table 2-1 provides a summary of the crash severity within the corridor for the most recent 5-year period. Between the years 2015 and 2019, 1,712 crashes were reported along the U.S. 69 Corridor, of which approximately 80 percent resulted in PDO; however, four fatal crashes were reported. The location of these fatalities varied throughout the corridor, but reports showed two fatalities occurring between 135th St and 151st St.

Table 2- 1: U.S. 69 Crash Severity (2015-2019)

Analysis Segments (U.S. 69)	Fatal	Injury	Property Damage Only	Total
W 95th St to W 103rd St	1	42	154	197
W 103rd St to I-435	0	17	86	103
I-435 to College Blvd	0	43	186	229
College Blvd to W 119th St	0	48	232	280
W 119th St to Blue Valley Pkwy	1	48	149	198
Blue Valley Pkwy to W 135th St	0	50	220	270
W 135th St to W 151st St	2	48	189	239
W 151st St to W 159th St	0	17	44	61
W 159th St to W 167th St	0	10	29	39
W 167th St to W 179th St	0	20	76	96
Total	**4**	**343**	**1,365**	**1,712**

Source: KDOT Crash Data – 2015 to 2019.

Crashes experienced throughout the corridor resulted from one of three predominate crash types: rear end, single vehicle or sideswipe in the same direction. As shown in **Table 2-2,** these accounted for approximately 94 percent of all crash types reported along the corridor, with rear end collisions being the leading crash type with over 50 percent of crashes.

Table 2-2: U.S. 69 Crash Types (2015-2019)

Analysis Segments (U.S. 69)	Head On	Rear End	Angle	Sideswipe Opposite Direction	Sideswipe Same Direction	Backing	Single Vehicle	Other	Unknown	Total
95th St to 103rd St	1	43	23	0	37	0	92	1	0	197
103rd St to I-435	0	23	4	0	27	0	48	1	0	103
I-435 to College Blvd	0	114	10	1	22	0	79	2	1	229
College Blvd to 119th St	2	158	11	0	37	1	70	0	1	280
119th St to Blue Valley Pkwy	1	122	9	1	18	0	46	1	0	198
Blue Valley Pkwy to 135th St	0	194	10	0	22	2	41	1	0	270
135th St to 151st St	1	150	9	0	25	0	51	3	0	239
151st St to 159th St	0	33	6	0	8	0	14	0	0	61
159th St to 167th St	0	9	4	0	3	0	23	0	0	39
167th St to 179th St	1	23	1	0	8	0	63	0	0	96
Total	**6**	**869**	**87**	**2**	**207**	**3**	**527**	**9**	**2**	**1,712**
Percentage	**0.4%**	**50.8%**	**5.1%**	**0.1%**	**12.1%**	**0.2%**	**30.8%**	**0.5%**	**0.1%**	**100.0%**

Source: KDOT Crash Data – 2015 to 2019.

Statewide, 4-lane divided urban highways in Kansas, similar to U.S. 69, saw average crash rates of 1.034 crashes per million vehicle miles traveled (MVMT) and 0.223 fatalities per hundred million vehicle miles traveled (HMVMT) between 2015 and 2019. When U.S. 69 is compared to 4-lane divided urban highway facilities in Kanas, six of the 10 identified roadway segments along the corridor surpassed at least one of Kansas's total crash and fatal crash rate averages (**Table 2-3**). Crashes experienced along these six segments primarily resulted in PDO crashes as a result of rear-end or single vehicle collisions.

Table 2-3: U.S. 69 Crash Rates (2015-2019)

U.S. 69 Segments	Average Daily Two-Way Traffic	Average Annual Crashes (2015 - 2019)	Average Annual Fatal (2015 - 2019)	Crash Rate (MVMT)	Fatal Crash Rate (HMVMT)
95th St to 103rd St	90,300	39.4	0.2	0.534	0.271
103rd St to I-435	71,250	20.6	0.0	1.200*	0.000
I-435 to College Blvd	65,950	45.8	0.0	3.523*	0.000
College Blvd to 119th St	61,200	56.0	0.0	2.321*	0.000
119th St to 127th St	60,100	39.6	0.2	1.143*	0.577
127th St to 135th St	91,100	54.0	0	1.608*	0.000
135th St to 151st St	62,700	47.8	0.4	1.034*	0.865*
151st St to 159th St	45,600	12.2	0	0.726	0.000
159th St to 167th St	36,700	7.8	0	0.582	0.000
167th St to 179th St	33,700	19.2	0	0.924	0.000
		Kansas Statewide Average		**1.034**	**0.653**

Source: KDOT Crash Data – 2015 to 2019 - * Denotes a rate higher than statewide average

Crash frequency for the most recent 5-year period was the highest between I-435 and W 135th St. Three of the four analysis segments between I-435 and W 135th Street experienced crash frequency of over 50 crashes per year per mile. These high crash frequency areas correlate to the findings of the previous studies and aligns with the results of the current traffic operational analysis. **Table 2-4** shows crash frequencies in crashes per year per mile for the U.S. 69 freeway from 2015 to 2019.

Table 2-4: U.S. 69 Crash Frequency (2015-2019)

U.S. 69 Segment	Crashes/Year/Mile
95th St to 103rd St	17.6
103rd St to I-435	31.2
I-435 to College Blvd	84.8
College Blvd to 119th St	51.9
119th St to Blue Valley Pkwy	25.1
Blue Valley Pkwy to 135th St	53.5
135th St to 151st St	23.7
151st St to 159th St	12.1
159th St to 167th St	7.8
167th St to 179th St	11.4

Source: KDOT Crash Data – 2015 to 2019

The existing safety analysis shows crashes occurring along the U.S. 69 corridor are predominantly low severity congestion related incidents. Areas of concern are primarily between I-435 and W 135th St. The findings of the safety analysis align with the traffic operational analysis presented later in this document.

2.2.1.3 Future Safety Conditions

A future predictive crash analysis was conducted using the Interactive Highway Safety Design Model (IHSDM) version 16.0.0 software, developed by the FHWA. The IHSDM implements methodology from the Highway Safety Manual (HSM) to predict crashes based on traffic volumes, roadway geometry, and other basic roadway characteristics such as barrier and shoulder widths. The predictive crash analysis evaluated Existing 2019 and Future 2050 No-Build conditions.

As part of the City of Overland Park's Proposed 2050 Regional Transportation Plan, several arterial streets within the predictive analysis study area are slated for improvements before 2050. These improvements consisted of the following:

- 119th Street – widen to 6 lanes west of the interchange;
- 151st Street – widen to 6 lanes;
- 167th Street – widen to 4 lanes; and
- 179th Street – widen to 4 lanes with signal control at the ramp terminals.

With these corridor improvements accounted for in the 2050 Future No-Build IHSDM, **Table 2-5** provides a comparison of the Existing 2019 and 2050 Future No-Build predictive crash results.

Table 2-5: Crash Comparison – Existing and 2050 (Future) No-Build

Segment	Delta (Existing to FNB)			Percent Change		
	Total Crashes	Fatal and Injury Crashes	PDO	Total Crashes	Fatal and Injury Crashes	PDO
U.S. 69	83.78	22.22	62.15	65%	52%	73%
I-435	3.99	1.02	2.97	13%	10%	14%
103rd St. (Goddard to Mastin St.)	2.43	0.71	1.72	15%	10%	19%
College Blvd. (109th St. to Mastin St.)	8.96	3.47	5.48	33%	32%	33%
119th St. (Grant St. to Farley St.)	11.06	5.63	5.43	24%	27%	22%
135th St. (Hemlock St. to Riley St.)	39.97	19.21	20.75	35%	39%	32%
151st St. (Lowell Ave. to Newton Dr.)	11.75	6.09	5.65	43%	50%	37%
159th St. (Shawnee Dr. to Foster St.)	4.83	4.42	0.41	32%	83%	4%
167th St. (475′ west of SB Terminal to 400′ east of NB Terminal)	3.97	1.24	2.74	567%	539%	583%
179th St. (950′ west of SB Terminal to 550′ east of NB Terminal)	34.62	16.24	18.38	962%	1365%	766%
Total	205.36	80.25	125.68	45%	42%	47%

Crash results presented are based on the difference in crashes predicted by the IHSDM for the year 2019 and 2050.
Source: FHWA's IHSDM

As depicted in Table 5, results from the predictive analysis shows that under 2050 Future No-Build conditions, crashes are predicted to increase along all analyzed mainline and arterial roadways. With roadway geometry and other basic roadway characteristics being consistent between the Existing 2019 and 2050 Future No-Build IHSDM, with the exception of the corridor improvements proposed in the City of Overland Park's 2050 Regional Transportation Plan, this predicted increase in crashes can be attributed to projected increases in traffic volumes, as this is the only non-consistent variable.

With Overland Park projected to continue to grow into the southern quadrant of the city, arterials such as 167th Street and 179th Street were considered as arterials with the most growth potential, as traffic volumes are projected to increase by more than 350%. For this reason, when looking a Table 5, the percent change in crashes predicted between Existing 2019 and 2050 Future No-Build appear relatively high. As volumes increase along these arterials, and new land use and development occurs, it should be expected that the number of crashes experienced would increase as well.

2.2.2 Reduce Congestion

It is an important goal of the proposed project to alleviate existing and future congestion levels in Overland Park and Johnson County, and to provide a more efficient U.S. 69 Corridor for the surrounding Kansas City region. Relieving congestion on U.S. 69 has been a primary focus dating back to the I-35/U.S. 69 Major Investment Study (MIS) completed in 1999. The initial MIS sought to address congestion on the existing 4-lane highway as well as the service and system interchanges along the corridor between 179th Street and I-35. While some corridor and interchange capacity improvements have been made on segments of the U.S. 69 Corridor since the MIS, traffic volumes have continued to increase and are projected to continue to worsen congestion into the future unless measures are put in place to address the congestion.

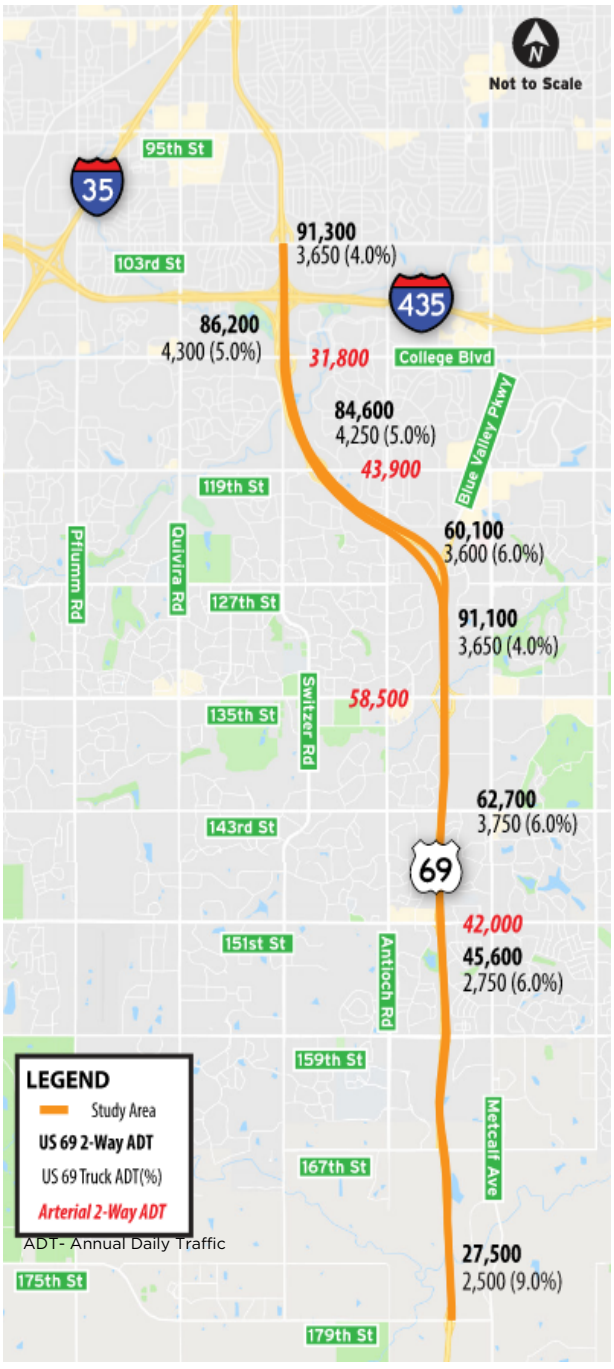
2.2.2.1 Existing (2019) Traffic Volumes

Existing 2019 traffic volumes were developed based on new study area traffic counts. The study team accounted for both pre- and post-COVID19 conditions occurring in 2020 to develop existing 2019 baseline traffic. Existing 2019 traffic data is shown in **Figure 2-1**.

2.2.2.2 Existing (2019) Traffic Operations

Existing 2019 traffic operations analysis focused on the AM peak hour of 7:30 to 8:30 a.m. and the PM peak hour of 4:45 to 5:45 p.m. To better understand the operational characteristics of the existing study area, the corridor is discussed in terms of northbound and southbound directional conditions.

Figure 2-1: Existing 2019 Daily Traffic Volumes



Existing (2019) Northbound Peak Hour Traffic Operations

At the southern limits of the corridor, existing AM peak hour volumes are relatively low at 13,150 northbound (27,500 two-way) daily traffic and traffic moves freely during the peak hours. Continuing northbound, AM peak hour volumes increase through the interchanges of 151st Street and 135th Street and the operations of U.S. 69 begin to degrade as traffic volumes between 135th Street and Blue Valley Parkway exceed 44,950 northbound (91,100 two-way) daily traffic. Vehicle queues extending as far south as the 151st Street interchange during the AM peak hour are common.

The segment between 151st and Blue Valley Parkway is one of the worst bottlenecks in the corridor. During the AM peak hour, vehicles that should operate at a 65-mph posted speed are routinely traveling at speeds between 20 to 40 mph. This is primarily a result of:

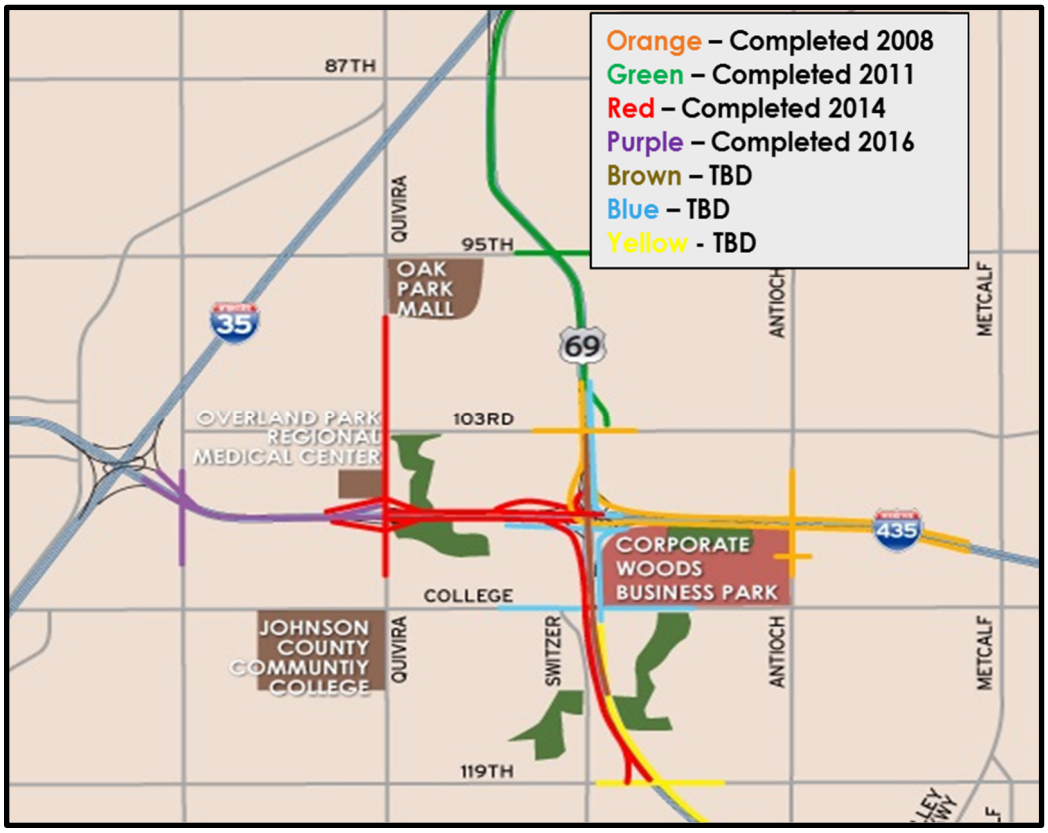
- The high volume of entering vehicles from both the westbound 135th and the eastbound 135th Street U.S. 69 on-ramps, particularly the traffic from the low-speed eastbound to northbound loop ramp;
- The congested mainline lanes of northbound U.S. 69 between 135th Street and Blue Valley Parkway; and
- The high volume of weaving vehicles exiting to Blue Valley Parkway.

Between Blue Valley Parkway and College Boulevard, congestion is moderate during the AM peak periods. The bottleneck between 135th Street and Blue Valley Parkway regularly acts as a meter which restricts northbound traffic flow.

During the PM peak hour, congestion is present between I-435 and 119th Street. This is a result of the U.S. 69 northbound to I-435 westbound loop ramp and the weaving occurring between I-435 and College Boulevard on-ramps.

Continuing north of I-435, where U.S. 69 has already been improved through the U.S. 69 "Green" project in 2011 (see **Figure 2-2**), U.S. 69 operates without congestion.

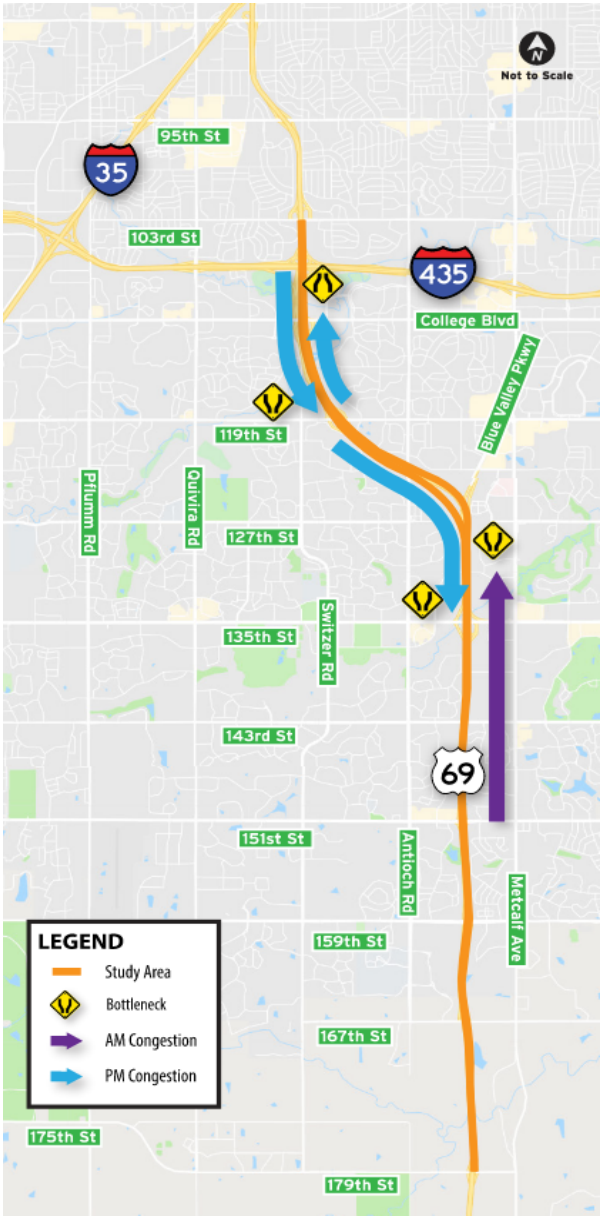
Figure 2-2: I-435 and U.S. 69 Improvements



Existing (2019) Southbound Peak Hour Traffic Operations

Improvements were made to southbound U.S. 69 from I-35 to 119th Street as part of the I-435 and U.S. 69 "Orange", "Green" and "Red" projects (shown in **Figure 2-2**). These improvements helped alleviate congestion by increasing mainline capacity as well as adding a southbound collector/distributor (C/D) road system. As the southbound C/D road connects to U.S. 69 between College Boulevard and 119th Street, it introduces a concentrated volume of traffic onto the existing two-lane mainline roadway section causing congestion near the 119th Street interchange during the PM peak hour. The improvements are considered an interim condition, necessitated by available funding limits, that will improve as additional improvements are completed on southbound U.S. 69. **Figure 2-3** summarizes the existing 2019 northbound and southbound traffic operations.

Figure 2-3: Existing Traffic Operational Analysis Summary



Similar to what is experienced in the northbound peak hour direction, the southbound segment between Blue Valley Parkway and 135th Street is an area of congestion during the PM peak period. This is a result of:

- The high volume of entering vehicles originating from Blue Valley Parkway;
- The left entrance from Blue Valley Parkway and the weave with traffic exiting to 135th Street;
- The high volume of traffic exiting to 135th Street;
- The already congested mainline lanes of U.S. 69 in this segment; and
- The lane continuity of southbound U.S. 69 where the outside lane drops at 135th Street.

The southbound congestion between Blue Valley Parkway and 135th Street during the PM peak hour often experiences speed reductions to between 20 and 40 mph. Farther to the south, after emerging from the southbound bottleneck between Blue Valley Parkway and 135th Street, traffic operations improve.

2.2.2.3 Future (2050) No-Build Traffic Volumes

The future No-Build traffic conditions for the year 2050 were developed from the 2019 baseline data based on data from the MARC travel demand model, historical KDOT data, and committed future projects. The future U.S. 69 2050 volumes are shown in **Table 2-6**. Comparing three locations along the corridor, traffic volumes are anticipated to grow 29 to 69 percent between 2019 and 2050.

Table 2-6: Existing (2019) and Future (2050) No-Build Traffic Comparison

U.S. 69 Segment	Existing Daily Traffic	Future No-Build Daily Traffic	Percent Change
Between I-435 and College Boulevard	86,200	110,900	29%
Between Blue Valley Parkway and 135th Street	91,100	128,300	41%
Between 151st Street and 159th Street	45,600	76,900	69%

Future (2050) No-Build Traffic Operations

Future No-Build traffic operations analysis focused on the same AM and PM peak hours as the Existing analysis. The Future No-Build assumes no improvements are made in the study area other than those projects that are fiscally committed in MARC's TIP or LRTP. **Figure 2-4** summarizes the future 2050 daily traffic volumes.

Future No-Build Northbound Peak Hour Traffic Operations

As a result of the increased traffic and no improvements to U.S. 69, the Future No-Build AM Northbound traffic is expected to travel at 20 mph or slower due to the significant bottleneck that occurs between 135th Street and Blue Valley Parkway and queues back to the south end of the study corridor past 179th Street. Continuing northbound, as a result of the increased traffic volumes, the operations of U.S. 69 continue to degrade between I-435 and 119th Street during the AM and PM peak hours and queue back to Blue Valley Parkway. **Figure 2-5** summarizes the future 2050 No-Build traffic operational analysis.

Figure 2-4: Future 2050 No-Build Daily Traffic

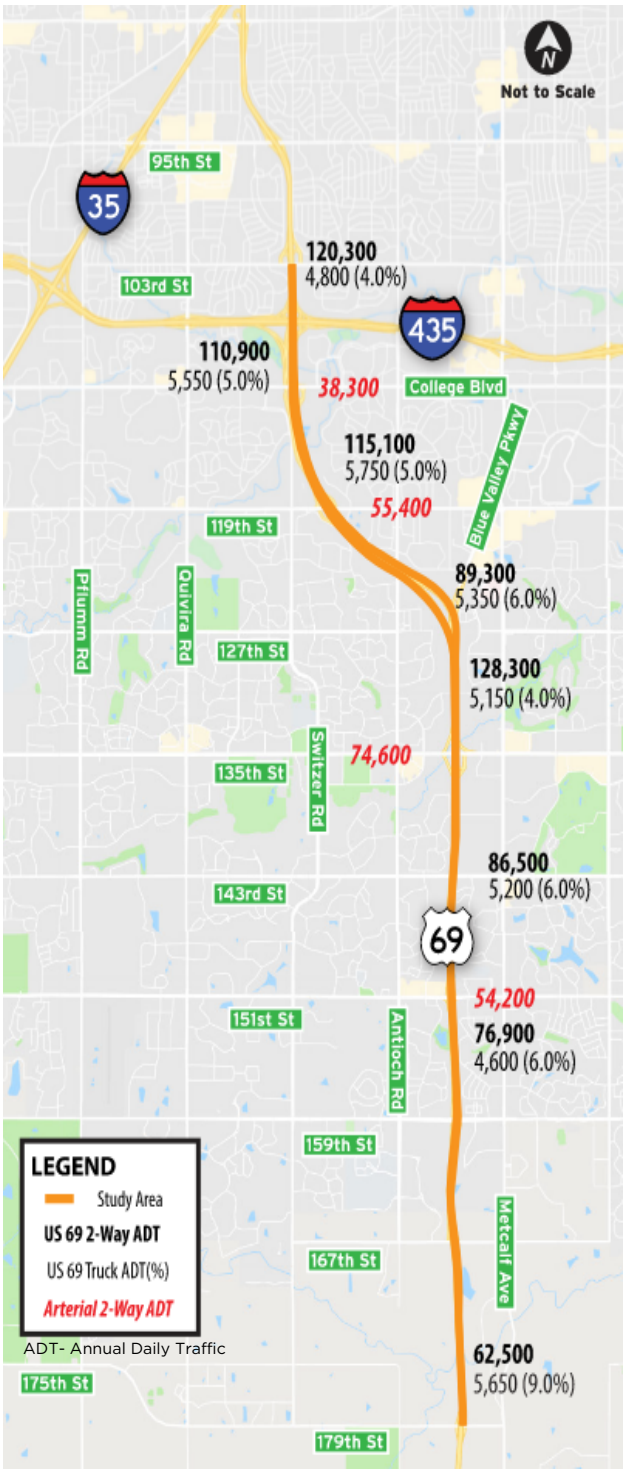
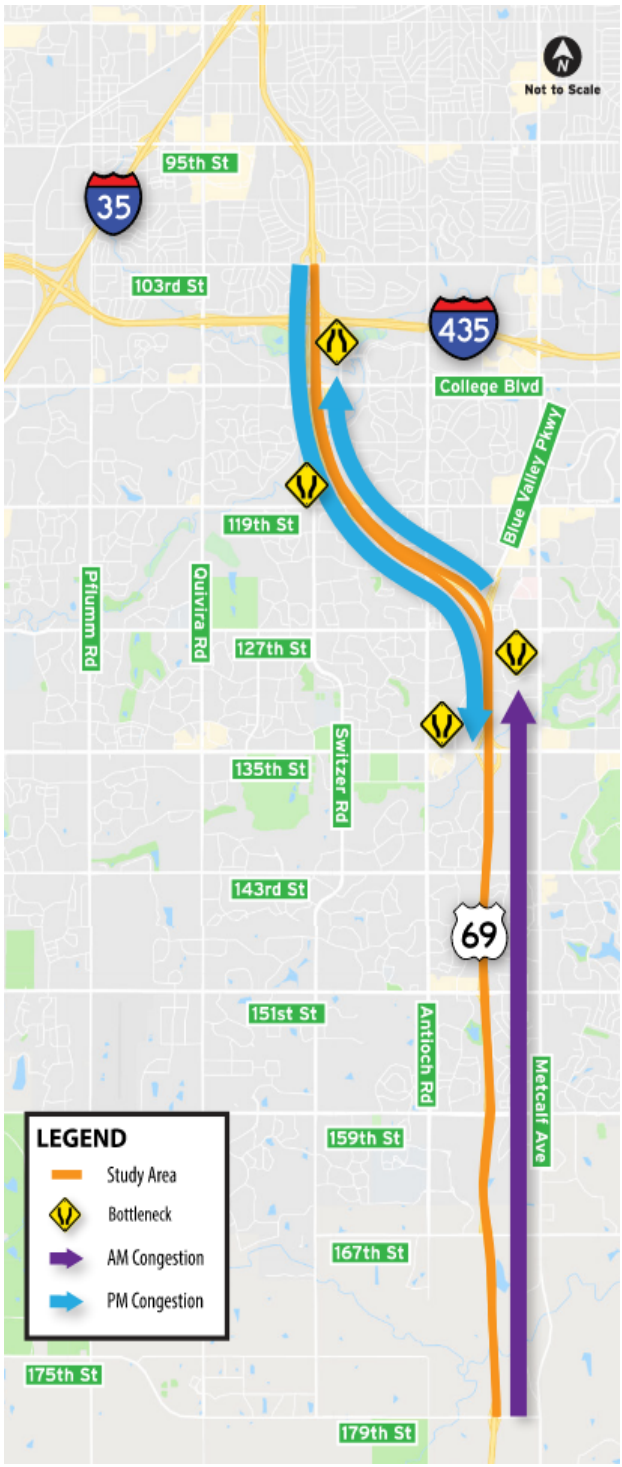


Figure 2-5: Future 2050 No-Build Traffic Operational Analysis Summary



The northbound results from this analysis can be summarized as:

- Locations where significant congestion exists today continued to degrade;
- Existing bottlenecks south of I-435 and Blue Valley Parkway extend further south to beyond 179th Street; and
- Operations of ramp terminal intersections and arterial streets experience significant delay.

Future Southbound Peak Hour Traffic Operations

In the southbound direction, the PM peak hour shows signs of congestion at the northern limits of the corridor. Vehicles that should operate at a 65-mph posted speed are routinely traveling at speeds less than 15 mph between the 103rd Street Interchange and 135th Street Interchange. Vehicles that should operate at a 65-mph posted speed are routinely traveling at speeds less than 15 mph.

The southbound results from this analysis can be summarized as follows:

- Locations where significant congestion exists today continued to degrade;
- Existing bottlenecks in the southbound direction worsen and cause slow speeds throughout the entire corridor between 103rd Street and 135th Street; and
- Operations of ramp terminal intersections and arterial streets experienced significant delay, specifically at the interchanges of 151st Street, 135th Street and College Boulevard.

Future Peak Hour Travel Times

Future No-Build traffic conditions are expected to provide poor levels of service by 2050 resulting in widespread increases in motorists' delay and travel times. Travel time in the existing directional peak hours was compared to those in the future No-Build scenario.

In the AM peak hour, the northbound average peak hour travel time from 179th Street to 103rd Street is 15 minutes for the existing 2019 conditions, while the 2050 future No-Build's average travel time is anticipated to increase to 81 minutes.

The southbound PM peak hour comparison has similar findings. In the existing 2019 condition, the average travel time from 103rd Street to 179th Street is 13 minutes. In the 2050 future No-Build condition, the travel time is expected to increase to an average of 74 minutes in the peak hour.

2.2.3 Promote Sustainability

A primary goal of the U.S. 69 project is to promote long-term corridor sustainability by addressing infrastructure condition and ongoing operations and maintenance needs, supporting environmental stewardship, as well as improving traveler reliability. The U.S. 69 Corridor is located in a densely populated and traveled area of the Kansas City region with limited right of way and funding available for continued expansion. As a result, proposed safety, capacity and reliability improvements need to be designed to meet the needs of the corridor in ways that offer long-term corridor sustainability.

It is also a goal of the project to support environmental stewardship and a healthy environment with investments that help reduce pollution and greenhouse gas emissions.

2.2.3.1 Infrastructure Condition

Pavement

The underlying pavement and base of U.S. 69 within the project study area is the original pavement constructed in the 1960's and 1970's. It has seen a series of overlay actions throughout the years to keep it in a serviceable condition. The pavement will require consistent and frequent rehabilitation to continue its serviceability.

Bridge Structures

There are 24 mainline bridge structures within the study area, of these 21 were built between 1965 and 1973, two were built in 2008 and one in 2017. Structural evaluations completed in 2018 categorized seven bridges in satisfactory condition, 14 in good condition and three in very good condition.

KDOT utilizes the Bridge Health Index (BHI) to communicate the overall condition of structures. The BHI is a continuum from 0 to 100 that reflects the overall deterioration of the structure. There are 27 mainline bridge structures within the study area, of these 22 were built between 1965 and 1973, two were built in 2008, two were built in 2012, and one in 2017. Structural evaluations completed in 2018 categorize seven bridges in satisfactory condition, 15 in good condition and 5 in very good condition. Utilizing the KDOT Bridge Health Index (BHI), four bridges are currently classified as "very poor" (NB U.S. 69 over 179th St, SB U.S. 69 over 167th St, NB U.S. 69 over 167th St, and SB U.S. 69 over 151st St), with an additional ten classified as "fair".

2.2.3.2 Travel Reliability

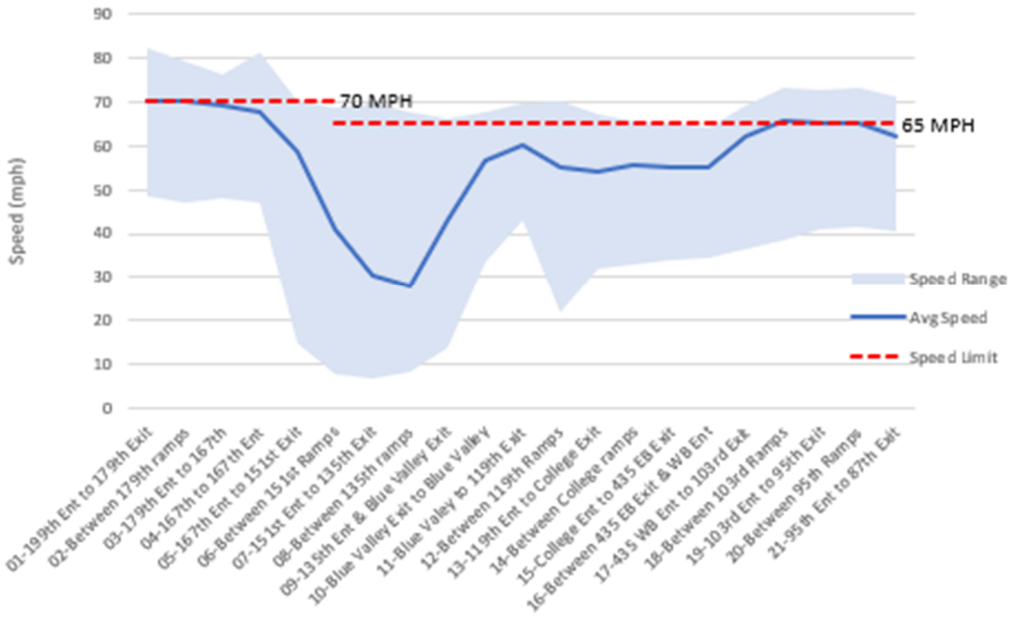
Peak hour traffic congestion is a daily reality in most urban areas of the United States. Drivers are used to the recurring, everyday congestion related to daily commutes or regular trips. It is the unexpected congestion that troubles travelers the most from crashes or other incidents. When incidents occur, a trip that typically takes 30 minutes, with little or no warning, can take an hour.

Most travelers are less tolerant of unexpected delays because such delays have larger consequences than travelers face with everyday congestion. Travelers also tend to remember the few bad days they spent in traffic, rather than an average time for travel throughout the year[1]. Therefore, improving trip reliability from recurring and unexpected congestion is a key component of the purpose and need for improving the U.S. 69 Corridor.

Figures 2-6 and 2-7 below demonstrate the U.S. 69 congestion and variability of the U.S. 69 Corridor for both the 2019 Northbound AM and PM peak direction.

In summary, there is a wide range of variability today along U.S. 69 during the AM and PM peak hours as shown by the light blue shading. In the AM peak hour, the segment from 151st through Blue Valley Parkway has the most variability in travel speed from the average. In the PM peak hour, the greatest travel speed variability occurs between I-435 and 151st Street.

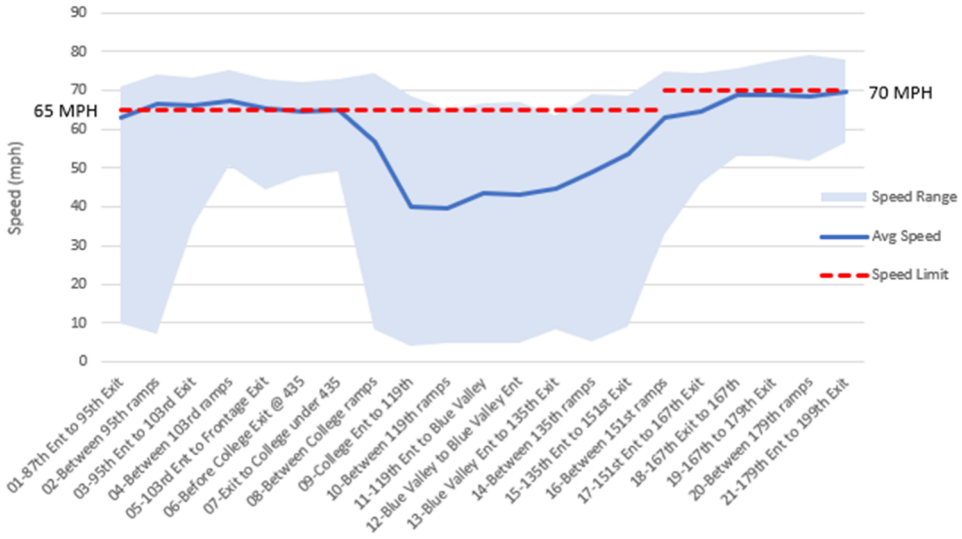
Figure 2-6: U.S. 69 NB AM Weekday Travel Speeds (2019)



Source: National Performance Management Research Data Set (NPMRDS) between February and April 2019.

[1]Travel Time Reliability, Making it there on time, all the time. U.S.DOT, FHWA

Figure 2-7: U.S. 69 SB PM Weekday Travel Speeds (2019)



Source: National Performance Management Research Data Set (NPMRDS) between February and April 2019.

2.2.4 Provide Flexible Choices

A flexible transportation system is one that accommodates the needs of all users and modes. Typically, this includes walking, cycling, public transit and commercial trucks in addition to passenger automobiles. The proposed improvements to the U.S. 69 Corridor need to coordinate and be consistent with the planned and proposed multimodal uses in the study area. The following section summarizes the planned and proposed multimodal uses for the study area from local and regional transportation plans.

2.2.4.1 City of Overland Park Comprehensive Plan

The *City of Overland Park Comprehensive Plan*, adopted December 2019, is the long-range plan for the City of Overland Park. The multifaceted plan covers a wide range of topics ranging from specific land use type goals to broader area and corridor goals. The plan recognizes the importance of a flexible transportation system and using mass transit as a tool to support mixed-use development.

2.2.4.2 South Overland Park Transportation Plan

The southern portion of the study corridor (between W 159th St and W 179th St) falls within the boundary of the *South Overland Park Transportation Plan,* which was adopted in February 2015. The plan covers an area centered on U.S. 69 between Lackman Rd and State Line Rd and W 159th St and the Johnson County/ Miami County line. The *South Overland Park Transportation Plan* identifies the desire to make a change in the area's transportation system, focusing on a system that encompasses the needs of modes in addition to single occupancy passenger vehicles.

2.2.4.3 MARC Transportation Plan

Connected KC 2050 is the Kansas City metropolitan area transportation plan developed by MARC, the MPO for the Kansas City region. The *Connected KC 2050* plan calls for providing a range of transportation choices for communities. These choices should allow for ease of travel for all as well as provide public health and environmental benefits.

2.2.4.4 Public Transit

The U.S. 69 corridor serves two public transit agencies, the Kansas City Area Transportation Authority (KCATA) and Johnson County Transit. These agencies jointly operate RideKC transit services across the metro. Seven routes operated by each agency cross or utilize U.S. 69 directly. Currently, the South OP Express is the only route that utilizes U.S. 69 directly between W 103rd St and W 135th St.

2.2.4.5 Bicycle and Pedestrian Facilities

The City of Overland Park Safe Bicycle Use Outreach Project is the city's bicycle facility plan adopted April 13, 2015 and updated in October 2016. An existing bikeway and shared use path map is included as part of that plan. MARC adopted the *Kansas City Regional Bikeway Plan* in January 2015. This plan established the goal or prioritizing a regional bikeway network across the entire Kansas City metro. Included in this plan is an existing and proposed facilities map.

A review of the existing bikeway and shared use path maps in the City of Overland Park and MARCs plans, aerial photography, and a windshield survey of the study area indicate that bicycle and pedestrian facilities exist at several locations along the study area and are separated into the categories of Shared Use Path or Bike Lane. Although none of these bicycle facilities are integral with the U.S. 69 travel lanes, some run along and cross the freeway's right of way.

2.2.4.6 Commercial Trucks

Commercial trucks are a component of the traffic stream within the study area. The U.S. 69 Corridor has regional significance in goods movement, connecting southern Johnson County to the Kansas City metro area. According to KDOT's 2017 to 2019 traffic flow maps, a range of three to nine percent of the daily vehicles in the U.S. 69 Corridor are trucks. Higher proportions are concentrated in the southern portion of the study area south of W 151st St, where percentages range from 5.6 percent to 9.1 percent. The percentages along the rest of the study area are between 3.4 percent and 5.6 percent. This indicates that while the corridor does not carry a high percentage of truck traffic, there is a higher concentration in the southern portion of the study area that is heavier in agricultural and industrial land uses. As development continues to increase south of W 151st St consistent with land use plans, truck percentages will likely continue to grow.

2.2.5 Accommodate Local and Regional Growth

A key purpose of the U.S. 69 project is to accommodate local and regional growth through coordinated transportation improvements consistent with planned and proposed community land use. Regional land use and development patterns provide insight into a community's potential transportation needs. MARC growth trends project between now and 2050 population will grow by 32% and employment by 28% within Johnson County. As the region grows and future land development occurs in the vicinity of the study area in harmony with local and regional land use plans and specific area plans, it is anticipated that local and regional traffic volumes will increase across the U.S. 69 Corridor. The following describes the future area land use and development plans in the U.S. 69 Corridor.

2.2.5.1 MARC Long Range Plan

Connected KC 2050 is the Kansas City metropolitan area transportation plan developed by MARC. The U.S. 69 study area falls within the boundaries of MARC's transportation management area for the region. The plan calls for focused investments in transportation that accommodates growth along major regional transportation corridors. The plans desired outcomes include: access to opportunity by removing transportation barriers; addressing public health and safety through safe and secure places to live, walk, bike, ride the bus and drive with clean air to breath; prioritize a healthy environment by supporting investments that reduce pollution and greenhouse gas emissions; provide a range of transportation choices; and supports economic vitality by maintaining a multimodal transportation system that efficiently moves people and goods while supporting economic development.

2.2.5.2 City of Overland Park Comprehensive Plan

The *City of Overland Park Comprehensive Plan*, adopted December 2019, is the long-range plan for the City of Overland Park. The plan identifies a regional land use strategy for the corridor. It shows concentrations of commercial, industrial and office uses at interchanges along U.S. 69 surrounded by lower density residential. Much of the areas adjacent to U.S. 69 between W 103rd St and W 135th St are developed with little room for further development, opportunities for growth exist within the study area south of W 135th St. These growth areas are expected to contribute to future increases in demand along U.S. 69.

Two additional studies the *Blue Valley Study Area Future Land Use Plan and Goals* and the *West Aubry Study Area* were conducted in 2003 and 2009 respectively. These studies cover the southern portions of the U.S. 69 study area from 159th Street to 179th Street. Both studies land use plans and goals were incorporated into the City of Overland Parks comprehensive plan.

2.2.5.3 South Overland Park Transportation Plan

The *South Overland Park Transportation Plan* details the southern portion of the study area from W 159th St to W 179th St and was adopted in 2015. The plan covers an area centered on U.S. 69 between Lackman Rd and State Line Rd and W 159th St and the Johnson County/ Miami County line. The plan identifies the area within the U.S. 69 study area as primarily agricultural in nature with pockets of low density residential and industrial/business park uses. It projects a transition in the future to primarily low or very-low density single family residential throughout the corridor with mixed use and office uses between W 159th St and W 179th St. This transition from agricultural to low density residential and mixed use or office uses is expected impact U.S. 69 as the primary transportation corridor in this portion of Overland Park.

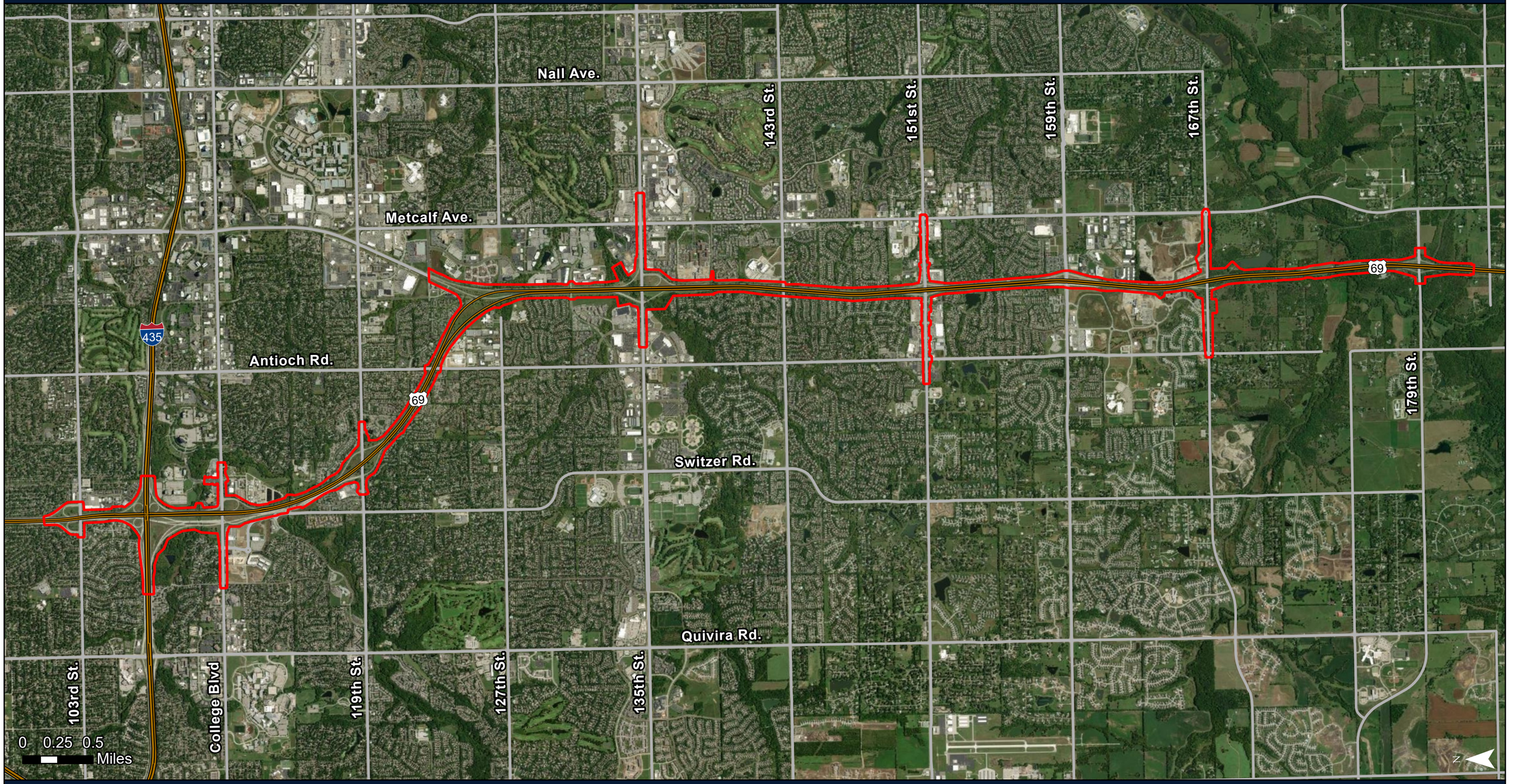
3.0 PLANNED AND COMMITTED SYSTEM IMPROVEMENTS

Several other projects are planned for the City of Overland Park and the Johnson County area that need to be taken into consideration as the proposed improvements for the U.S. 69 Corridor are developed. These projects include:

- U.S. 69 NB Bridge at 179th Street – Replacement; Programmed for 2022.
- U.S. 69 Johnson County – Guardrail End Terminal Updates; Programmed for 2022.
- U.S. 69 and 167th Street Interchange improvements – Potentially a separate project by the City of Overland Park that is environmentally cleared as part of this EA.
- 119th Street from Pflumm Road to U.S. 69 – Corridor widening and improvements; Programmed during the 2030 decade.
- 151st Street from Antioch Road to Metcalf Avenue - Corridor widening and improvements; Programmed during the 2030 decade.
- 179th Street from Lackman Road to Metcalf Avenue – Corridor widening and improvements; Programmed during the 2030 decade.
- Antioch Road from 119th Street to 135th Street – Corridor widening and improvements; Programmed during the 2030 decade.
- Antioch Road from 135th Street to 179th Street - Corridor widening and improvements; Programmed during the 2040 decade.
- Metcalf Avenue from 119th Street to 159th Street (2 separate projects) - Corridor widening and improvements; Programmed during the 2030 decade.
- Metcalf Avenue from 167th Street to 179th Street - Corridor widening and improvements; Programmed by 2026.

U.S. 69 Project Study Area

Figure 1-1



Legend

Study Area

U.S. 69 Modernization and Expansion Project
Environmental Assessment
KDOT# 69-46 KA-5700-02

69 EXPRESS

Kansas Department of Transportation